

REMARKS

Claims 13, 14, and 16-18 remain in the application for consideration of the Examiner.

Reconsideration and withdrawal of the outstanding rejections are respectfully requested in light of the above amendments and following remarks.

Claims 13-14 were rejected under 35 U.S.C. § 103 as being unpatentable over Licata in view of Lane; Claim 16 was rejected under 35 U.S.C. § 103 as being unpatentable over Licata in view of Lane in view of Bauer; Claims 17 and 18 were rejected under 35 U.S.C. § 103 as being unpatentable over Licata in view of Lane and further in view of Lantsman; and Claims 13 and 14 were rejected under 35 U.S.C. § 103 as being unpatentable over Denning in view of Licata and Lane.

These rejections are respectfully traversed.

It is respectfully submitted that Licata does not disclose or suggest the presently claimed invention including means for applying only an RF signal to the layer of metal on the surface of the wafer to cause it to attract argon ions from the plasma to close to argon planes and to pinch on the service of the wafer and remove contaminated material therefrom.

The Examiner's attention is directed to column 6, lines 45-50 where Licata discloses that the negative potential accelerates positive ions from the plasma 23 towards surface 21 of the target 16 which upon impact causes electrons to be emitted from the surface 21 of the target 16.

This does not disclose applying only an RF signal to the wafer.

Lane does not disclose or suggest the presently claimed invention including the means for applying only an RF signal to the layer of metal on the surface of the wafer to cause it to attract argon ions from the plasma to close argon planes and to pinch a surface of the wafer and remove the contemned material therefrom.

The Examiner's attention is directed to page 13, lines 20-25 of Lane, where Lane discloses radio frequency sputter etch also removes any oxides which may have built up on any of the electrically conductive medals of the wafer.

Lane discloses a RF etch.

Whether or not Bauer teaches sputter etching of substrates and whether or not one of ordinary skill in the art would consider modifying either Licata or Lane is of no moment since the resulting construction would still in no way disclose or suggest the presently claimed invention.

Additionally, whether or not Lantsman discloses sputter etching and whether or not one of ordinary skill in the art would consider modifying either Licata or Lane is of no moment since the resulting construction would still in no way disclose or suggest the presently claimed invention.

Dennings does not disclose or suggest the presently claimed invention including the means for applying an RF signal to the layer of metal on the surface of the wafer to cause it to attract argon ions from the plasma to close the argon planes and to pinch on the surface of the wafer and remove contaminated material therefrom.

The Examiner's attention is directed to column 5, lines 20-30 of Dennings were Dennings discloses that the wafer moved via the buffer chamber 3 to one of the radio frequency preclean chambers as shown in Figure 1.

The RF preclean chambers are used to round corner portions of the inlaid via and/or trench openings. In addition, the preclean chamber cleans exposed conductive surfaces of the semiconductor wafer in preparation for the copper barrier and copper seed layer formation.

It is clear that the RF is applied before the copper barrier and copper seed and consequently could not disclose the presently claimed invention.

In light of the above, it is respectfully submitted that the present application is in condition for allowance, and notice to that effect is respectfully requested.

While it is believed that the instant response places the application in condition for allowance, should the Examiner have any further comments or suggestions, it is respectfully requested that the Examiner contact the undersigned in order to expeditiously resolve any outstanding issues.

To the extent necessary, Applicant petitions for an Extension of Time under 37 CFR 1.136. Please charge any fees in connection with the filing of this paper, including extension of time fees, to the deposit account of Texas Instruments Incorporated, Account No. 20-0668.

Respectfully submitted,



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